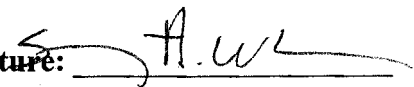


Evaluation of Position Description

Labor Category/FLSA: Exempt

 Current Position Description
 X Proposed Position Description

Date Prepared: 07/08/03

Approving Official: Name: Sheryl A. Wheeler Signature: 
Title: HR Specialist

Position Title/Series/Grade: Engineering Technician (Utility), GS-0802-11

ORGANIZATION: Division of Property Management

References: Engineering Technician Series, GS-802

Introduction: This position is located in the Division of Property Management (DPM). The Division provides professional leadership for the engineering programs and serves the NIH Community by providing support for renovations, new construction and maintenance of existing facilities, utilities and grounds. The employee serves as an engineering technician, responsible for field engineering, contract administration, troubleshooting utility systems, and operation and maintenance, which are site utilities in nature and advises on long range planning relating to utility generation and distribution systems.

Series and Title Determination: The employee serves as an engineering technician responsible for the coordination of multiple efforts to carry out activities that support the engineering program activities of the Division. The work requires practical knowledge of the principles of engineering and experience to coordinate program projects. The position meets the criteria of the Engineering Technician Series, GS-802 series that includes technical positions that require practical knowledge of the methods and techniques of engineering and the construction, application, operations, and limitations of engineering systems, processes, structures, devices, and materials. These positions do not require professional knowledge and abilities for full performance and do not require completion of a professional curriculum leading to a bachelor's degree in engineering. **Engineering Technician** is the authorized title for non-supervisory positions classified in this series. The parenthetical (Utility) is affixed to the position show subject matter specifications. The title of this position is **Engineering Technician (Utility)**.

Grade Determination: The Engineering Technician Series, GS-802 provides grade-level criteria in terms of two factors: **Nature of Assignment** -- deals with nature, variety, and purpose of duties performed; scope and difficulty of the assignments; knowledge required and the degree to which judgment is required in resolving problems and extent to which the technician must define the problem and **Level of Responsibility** -- deals with extent of review given to completed work and guidance received while the work is in progress; nature and purpose of personal contacts; and impact of findings.

Nature of Assignment: The incumbent is responsible for providing assistance in the resolution of problems associated with complex electrical substations and distribution systems. The incumbent is concerned with a variety of conventional and non-conventional electrical equipment, apparatus and systems. The employee visits construction projects to observe and report on the technical features of construction operations pertaining to specialization with the electrical engineering field and examines preliminary and final design features of electrical systems and configurations to complete projects. Based upon field evaluations, the incumbent develops and recommends changes to plans and specifications. This matches the grade 11 level described in the standard.

According to the standard GS-11 engineering technicians perform work of broad scope and complexity that requires application of demonstrated ability to interpret, select, adapt and apply many guidelines and engineering principles to the area of specialization. They plan and accomplish complete projects of conventional nature requiring the independent adaptation of general information and data and interpretation and use of precedents. Characteristically, the assignments of GS-11 technician require that they use initiative and sound judgment to plan and coordinate phase of the work and in selecting which of several alternatives to use in arriving at an acceptable engineering compromise.

The work is analogous to the following illustration in the standard:

Prepares designs and specifications for various utility systems. Assignments involve systems for office building, technical laboratories, experimental buildings, etc. where the complexity or non-conventional nature of the buildings entail design problems requiring considerable adaptation of precedents or design of features for which precedents are not directly applicable.

Level of Responsibility: The incumbent works under the direction of the supervisor and independently plans and carries out assignments. The incumbent is responsible for taking independent actions and making decisions to solve technical problems, and for dealing with issues involving the industrial community. The decisions and findings made by the employee are considered technically sound and are accepted without significant change. Completed work is generally reviewed only for adherence to policy and for assurance that broad technical objectives are fulfilled. This meets the level of responsibility described at the grade GS-11 in the standard.

According to the standard at the grade GS-11 the engineering technicians have considerable freedom to plan and carry out assignments. The supervisor make assignments in terms of major objectives, providing background information and advice on specific unusual problems, or policy questions arising in the course of the project, may be discussed with the supervisor but technical assistance is infrequently sought or required. Completed work is reviewed for general adequacy, conformity to purpose of the assignment, and sound engineering judgment.

On both the **Nature of Assignment** and **Level of Responsibility** this position meets the grade GS-11.

Classification Determination: Engineering Technician, GS-802-11.

POSITION DESCRIPTION

Engineering Technician (Utility), GS-0802-11

Introduction

The Division of Property Management (DPM) serves all of the NIH Community by providing support for renovations, new construction and maintenance of existing facilities, utilities and grounds. The Division provides professional leadership for the engineering programs of the Department of Health and Human Services, National Institutes of Health (NIH). The scope of DPM operations is such that the effectiveness with which they are carried out has a major and direct effect on the worldwide biomedical research programs of the NIH. In addition to the main facilities at the Bethesda Campus and in Poolesville, MD, NIH has facilities at Research Triangle Park, North Carolina, Rocky Mountain Laboratory in Montana and the Gerontology Research Center in Baltimore, MD.

The Central Utilities is responsible for management of the utility services program at NIH. This includes the operation and maintenance of the central boiler plant, central air conditioning plant, and all underground utility distribution and collection systems. Other related functions include environmental compliance, energy and water management, utility budgeting, metering of utility consumption, planning for utility system expansion, and permitting of new connections and alterations to the utility systems. The facility and utility operations and maintenance program is complicated, and critical elements are intensified by aging equipment and buildings, rapidly expanding and changing utility requirements, aging support infrastructure, unpredictable purchased utility prices, rapidly changing legislation and federally mandated programs and to a large extent by the complexity of the various missions being supported. This position is located within the DPM in one or more of the subordinate organizational components responsible for the provision of operations and maintenance of NIH facilities.

The employee will serve as an engineering technician, responsible for field engineering, contract administration, troubleshooting utility systems, and operation and maintenance, which are site utilities in nature. The incumbent provides contract and in-house support relating to Supervisory Control and Data Acquisition System, Utility Metering, and utility management functions. The incumbent advises on long range planning relating to utility generation and distribution systems. The engineer technician will concern himself with utility equipment, apparatus and systems; visit construction sites to observe and report on the technical features of construction operations pertaining to specialization with the utility engineering field; examine preliminary and final design features of utility systems and configurations prepared by architect-engineers and NIH engineers to determine that they will produce a satisfactory end product. Based upon field evaluations, recommend changes to system designs, construction, and operation and maintenance. The incumbent must be able to work independently and take the initiative to complete the work assigned with a minimum of direct supervision regardless of the nature of the work. In addition, the incumbent must to be flexible in the types and complexity of work performed.

Major Duties and Responsibilities

The major duties and responsibilities are:

A: Field Engineering problem Resolution (20%)

Provides engineering technician consultation and analysis requiring application of conventional knowledge and experience in the solution of utility engineering problems. Also, responds to requests relative to field specific and immediate utility distribution system problems relating to a distribution system and/or component failure. The incumbent assures that the latest applications are applied to avoid future operational problems and assists in resolving technical disputes and problems with public utility companies in regard to facilities interconnecting NIH systems and utility company systems. Observes field acceptance test on major utility equipment.

B: Technical Assistance (20%)

The incumbent shall be well versed in the latest utility codes, agency guidelines, technical manuals, etc. Researches manufacturers' catalogues and industry manuals to solve problems or replace equipment. Performs field-engineering analyses on utility distribution systems and components to assure that they continue to meet the minimum requirements to assure system integrity. Assists utility engineer and consultants in conducting computer modeling and simulations to analyze utility distribution systems, and to assure that the systems and components are operating within their designed constraints and the proper coordination among the protective devices. Also, writes utility correspondence and contract documentation such as scopes of work or statements of work, cost estimates to explain, provide directions, and to procure and resolve equipment and system problems. Also, assists in the technical development and implementation of a utility metering program.

C. Developing Repair and Improvement(R & I) Programs (10%)

Assists in analyzing and documenting utility distribution system conditions, reviewing all the related literature and documentation, and develop and update comprehensive repair and maintenance programs covering all pertinent utility distribution system components. Performs periodic analyses, inspections, and reviews of utility distribution systems to identify system deficiencies relative to capacity, flexibility, component condition, reliability, efficiency, operation, maintenance and safety. Assists in evaluating deficiencies, developing solutions to correct deficiencies, comparing alternative solutions on a technical and economic basis, and developing comprehensive R&I Program requirements to correct deficiencies. Such corrections should be established in coordination with the utility organization so as to maximize system reliability while minimizing utility rates. Writes work requests to obtain support from other groups for studies, design, construction, and repairs. Assists in performing utility system assessments via in-house or contract support.

D: Project Plans and Specification Review and Coordination (10%)

Reviews projects for impact upon the adequacy of utility distribution systems, adequacy of planning of interface with distribution systems and adequacy of energy conservation considerations.

Assists in assuring the adequacy of utility system planning to accommodate the loading increase associated with the planned projects. Assists utility engineer by providing guidance, field data and information on a continuing basis for use in designs and specifications that interface with utility distribution systems. Reviews plans and specifications, which impact utility distribution systems to assure compliance with the required utility system development and operation. Provides specific and detailed requirements (characteristics, capacity, rating, protective equipment, protection scheme, etc.) for interconnections between NIH utility systems and the systems of utility suppliers. Provides construction support and technical assistance on utility projects. Attends design and construction meetings were applicable.

E: Utility Drawings (15%)

Shares responsibility for keeping utility drawings up-to-date. Incumbent shall be familiar with computer aided design tools such as AutoCad as well, as personnel computer workstations. Incumbent shall monitor construction and repair contracts and in-house utility repairs to ensure such actions are recorded on the utility drawings. Assists and coordinates with CIT and other public works organizations to ensure communication/cable and street lighting drawings are updated.

F: Energy Conservation Customer Support (5%)

Assists in conducting surveys and minor studies of the utility distribution and utilization systems for the sole objective of conserving energy, or as part of a larger study and analysis of the overall efficiency of utility distribution systems and components. Evaluates inefficiencies, develops operating and management procedures for the more effective utilization of energy, and develops projects to modify utility distribution systems and utilization systems in order to increase the efficiency of these systems. Incumbent shall be familiar with utility metering and monitoring system, variable speed drives, light systems, etc. Attends energy conservation meetings were applicable.

G: Manages utility maintenance contract and preventive maintenance (20%)

Manages the utility maintenance contract. Coordinates all task requests and funding with the appropriate group. Writes scopes of work, negotiates task orders, and awards contracts in accordance with NIH policies and Federal Acquisition Regulation (FAR), and contract requirements. Incumbent has responsibility to initiate and renew the utility contracts for the Main Campus and Poolesville. As a Project Officer, keep contract documentation in a central filing system, evaluate contractor performance, recommend payment or non-payment, performance contract inspections, make contract modifications, approve contractor schedules, and prepare government cost estimate, negotiate claims and contracts. Attends contract meetings, where applicable. Coordinates and assists the public works utility groups to setup, implement, and maintain a preventive maintenance program using computerized maintenance system.

Factor 1, Knowledge Required By The Position

Knowledge of utility engineering principles and theory of the type, scope and thoroughness ordinarily acquired via work experience and technical training.

Knowledge of, and experience in, the utility distribution and utilization. Incumbent must have a strong knowledge of the design, operations and maintenance, inspection and testing, and analysis of utility distribution systems.

Knowledge and ability to collect data in order to assist engineers to perform utility system studies that will be used in state-of-the-art computer modeling and simulations software.

Knowledge and ability to perform field investigations to gather data to resolve system and component problems.

Knowledge of the Federal and/or NIH policies, instructions and regulations applicable to the operation and maintenance of utility distribution systems as well as knowledge of the National Codes applicable to the design, construction, operation, maintenance, inspection, and testing of utility distribution systems and components.

Ability to use practices, theories, techniques, methodology, in identifying solutions to relevant problems, especially in the areas of utility systems and components, failure analysis, energy conservation and metering, utility systems analyses and monitoring, customer liaison, etc.

Knowledge of utilities systems operations, particularly Public Works utility systems.

Knowledge and ability to employ tact in dealing directly with professional and nonprofessional personnel.

Ability to interpret Federal, ORS, and higher level NIH policies and regulations, to evaluate the impact they have on activities supported, and to provide appropriate program guidance and assistance.

Factor 2, Supervisory Controls

The position is under the general-supervision of the GS-801-13, Supervisory General Engineer. The supervisor sets objectives and allocates resources for work assignments. The incumbent identifies schedules and methodologies under which the work will be accomplished, for review and acceptance by the supervisor. The incumbent has responsibility for planning and carrying out evaluations and rendering advice. Incumbent to use knowledge and skill in resolving issues and interpreting policies and regulations in accomplishing the assigned tasks. The results of the work assignments are considered technically acceptable and reviewed to determine their effect on the overall utility program. Reviews are concentrated on fulfillment of program objectives, adherence to administrative policy, and assurance that broad technical objectives have been met. The incumbent coordinates assignments to assure policies are maintained.

Factor 3, Guidelines

Guidelines include national and local codes and standard professional material, federal and state laws and regulations, directives, local instructions, budget guidance, standard business references, economic indices and labor rates, federal and commercial catalogues. Normally, guidelines can be applied directly. Supervisor will be consulted if they require a significant degree of interpretation to determine the extent of relevance to the type of problem encountered. The incumbent will use judgment and experience to identify methodologies for solving problems. The incumbent is required to appropriately use guidelines and methodologies to effectively execute the various assigned utility engineering programs. The incumbent researches and utilizes practice and policies, engineering design manuals, guidelines, policies and practices of other Federal agencies, engineering textbooks, and pertinent professional organizations and industry standards.

Factor 4, Complexity

The work involves utility distribution systems, which have evolved over extended periods. This result in the need to resolve equipment and systems problems associated with different types and makes of equipment and with obsolete as well as state-of-the-art technology. The incumbent must be able to identify the methods required to solve typical construction, operation and maintenance problems.

The work also requires the familiarity of state-of-the-art computer modeling and simulation software and hardware to effectively analyze utility systems and components capabilities, their reactions under adverse conditions or planned changes, and determine the proper operational constraints, parameters, and settings.

Factor 5, Scope and Effect

The purpose of the work is to provide engineering technician support to operational personnel and engineers in order to maximize the efficiency and effectiveness of the utility plants and distribution systems, while minimizing the utility costs. Technician consultation, inspection, analysis, testing, review and monitoring programs will be implemented to meet these objectives. Incumbent will provide field support, information, and action.

Factor 6, Personal Contacts

In the execution of the incumbent's assignments, he or she must communicate with other internal public works organizations. Such communications include engineering, operational and maintenance, and management personnel. Also, communicates with the technical levels of personnel within utility companies and municipalities, technical professional organizations, pertinent levels at parallel organizations within other federal agencies. These contacts are made through personal visits, meetings, conferences, and telephone conversations.

Factor 7, Purpose of Contacts

Contacts are to resolve problems; provide effective customer liaison; maintaining customer satisfaction; gather data; coordinate with management and employees new methods, work procedures, required to implement changes in established operational and business procedures, etc.; consult with engineers, operations and maintenance personnel, management experts to exchange information associated with common engineering, operations and maintenance, and management programs; and obtain information from commercial companies or vendors regarding developmental methodologies, specialty skills, specialty equipment, automated systems, training, or resource assistance.

Factor 8, Physical Demands

The work is located in an office and field setting. There will be some climbing, bending, stooping, walking over rough and uneven surfaces, etc.

Factor 9, Work Environment

The majority of the work is spent on duties that do not require more than the normal physical dexterity. During field visits there may be exposure to medium voltage electrical distribution equipment. He or she is also sometimes exposed to adverse weather conditions and entering confined spaces that require the use of a hardhat and safety gear during such field visits.